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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,444	11/13/2003	Dan W. Youngner	H0005690US (HON0003/US)	8710
7590	01/11/2006		EXAMINER TUROC, DAVID P	
Matthew Luxton Honeywell International Inc. Law Dept. AB2 101 Columbia Rd. Morristown, NJ 07962			ART UNIT 1762	PAPER NUMBER

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/712,444

Applicant(s)

YOUNGNER ET AL.

Examiner

David Turocy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS; WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 21-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-27 and 29-33 is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☒ Claim(s) 7 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Response to Amendment

1. The applicant's amendments, filed 11/2/2005, have been fully considered and reviewed by the examiner. The examiner notes the amendments to claims 1, 4, 5, 21, and 24, the cancellation of claims 14-20, and the addition of new claims 27-33. In light of the amendments to claims 6 and 24 the examiner has withdrawn the 35 USC 112 2nd paragraph rejections.

Response to Arguments

2. Applicant's arguments filed 11/2/05 have been fully considered but they are not persuasive.

The applicant has argued against the Shieh reference stating the reference fails to disclose the added limitation "positioning the shadow mask and the substrate in a fixture" and discloses Page 4, lines 21-25 as providing support for such a limitation.

The disclosure as cited by the applicant appears to discuss a fixture to fix the shadow mask in place, but fails to support positioning the shadow mask and the substrate *in a fixture*. Such an added limitation, however, cannot be considered new matter because the disclosure clearly discloses the positioning the shadow mask and substrate in a fixture (chamber) so that the shadow mask is in a position to align an aperture of the shadow mask with a portion of the surface. *** During patent examination, the pending claims must be "given the broadest reasonable interpretation consistent with the specification" by giving words their plain meaning unless the specification provides a

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- clear definition. See *In re Prater* 415 F.2d 1393 1404-05 162 USPQ 541 and *In re Zletz* 893 F.2d 319, 321, 13 USPQ2d 1320. ***.

The applicant has argued against the Shieh reference, stating the reference fails to teach providing a first material at an angle normal to the surface and a second material at a different angle so that the second material covers all of the first material. The examiner respectfully disagrees and directs the applicant's attention to Column 6, lines 29-54, and more specifically lines 50-54. Shieh clearly discloses providing a second material "dithered slightly about the perpendicular" to ensure complete coverage.

All other arguments by the applicant are directed to newly amended limitations that were not present at the time of the previous rejection and therefore are considered moot and will be addressed in the subsequent rejections below.

Claim Objections

3. Claim 28 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, 4, 10, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5641611 by Shieh et al, hereafter Shieh.

Shieh teaches of a method for enclosing a reactive material by a covering material by providing a substrate with a fixed shadow mask within a vacuum chamber having the source materials therein (Figures, Column 4, lines 35-57, Column 1, lines 32-41). Shieh discloses providing a vacuum in the chamber and evaporating the reactive material and covering such that they pass through the shadow mask and deposits a covering material with a larger surface area to completely cover the reactive material (Figures, Column 2, lines 35-39, Column 4, lines 35-57). Shieh discloses rotating the substrate on an axis perpendicular to the surface covering during evaporation and a covering material that is located at an oblique angle to the axis (Column 6, lines 30-32, Column 2, lines 34-39, Column 6, lines 37-54).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 2, 5, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shieh.

Claims 2 and 12: Shieh does not explicitly disclose a covering material is from 0.1 to 10 percent greater than the area of coverage or the angle of incidence is in the range from 1 to 10 degrees.

However, Shieh discloses having a slight angle of incidence from the perpendicular to insure complete coverage of the reactive material (Column 6, lines 51-

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54). Therefore Shieh discloses the area of coverage and the angle of incidence are result effective variable, where too small a coverage (too small an angle) would result in incomplete coverage of the reactive material and too much coverage (too large an angle) would result in no added benefit of more complete coverage.

Therefore it would have been obvious to one skill in the art at the time of the invention was made to determine the optimal value for the angle of incidence and coverage area used in the process of Shieh, through routine experimentation, to completely cover the reactive material with the desired properties associated with complete coverage of the reactive material.

Claim 5: Shieh discloses providing a distance H between the shadow mask and portion to be coated, but does not explicitly disclose a desired distance. Therefore, one of ordinary skill in the art would be motivated to optimize the distance to provide an appropriate distance for depositing both the reactive material and covering material in the desired shaped.

Therefore it would have been obvious to one skill in the art at the time of the invention was made to determine the optimal value for the distance between the mask and substrate used in the process of Shieh, through routine experimentation, to provide a effective distance to deposit the reactive and covering material to the desired portions of the substrate.

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Claim 11: Shieh discloses rotating the substrate but fails to disclose the speed of rotation. However, It is the examiners position that the process parameters of speed of rotation is a known result effective variable. If speed is too low it would result in too large a coating thickness and too high a speed would result in a coating thickness that is too thin.

Therefore it would have been obvious to one skill in the art at the time of the invention was made to determine the optimal value for the speed of rotation of the substrate used in the process of Shieh, through routine experimentation, to impart the substrate with the desired properties associated with the coating.

9. Claims 6, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shieh and further in view of US Patent 6013538 by Burrows et al., hereafter Burrows.

Claim 6: Shieh teaches all the limitations of these claims as discussed in the 35 USC 102(b) rejection above, however, Shieh fails to disclose a specific reactive material.

However, Burrows, teaching of a method for covering a reactive material in the similar fashion as taught by Shieh, discloses providing a material comprising lithium (Column 6, lines 3-4). Shieh discloses providing a component comprising lithium with a thickness of 0.5 to 5 microns followed by a subsequent covering material with a thickness of 0.5 to 5 microns (Column 6, lines 10-11, 39-40). Since the component

Claim 21: None of the prior art cited or reviewed by the examiner alone or in combination teaches or reasonably suggests forming a microelectronic mechanical device using the process steps as claimed.

Claims 7 and 27: The closest prior art cited or reviewed by the examiner is Youngner et al, US Patent 6900702, discloses covering the rubidium with aluminum (Column 3), however, none of the prior art cited or reviewed by the examiner discloses providing a reactive material comprising gallium or rubidium and then subsequently enclosing the reactive material with tungsten or aluminum respectively by using evaporation and a shadow mask for deposition of both materials.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER